REMARKS

The Examiner's Official Action mailed December 11, 2002 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Two Month Extension of Time*, which extends the shortened statutory period for response to May 12, 2003. Accordingly, Applicant respectfully submits that this response is being timely filed.

Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on June 25, 1999; June 15, 2001; and December 18, 2001. A further Information Disclosure Statement is submitted herewith and careful review and consideration of this Information Disclosure Statement is requested.

Claims 1-3 and 6-19 were pending in the present application. New claims 20 and 21 have been added to recite additional protection to which Applicant is entitled. Claims 1-3 and 6-21 are now pending in the present application, of which claims 1, 6, 9-10, 15, 17, and 19 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance.

Paragraph 2 of the Official Action rejects independent claim 9 and dependent claim 14 under 35 U.S.C. 112, second paragraph. In response, independent claim 9 has been amended to remove the recitation of "an organic electroluminescence layer adjacent to said transparent electrode" to clarify the claim. Reconsideration is requested.

Paragraph 4 of the Official Action rejects claim 19 as anticipated by U.S. Patent 5,550,066 to Tang et al. It is well established that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

It is respectfully submitted that Tang fails to disclose a "peripheral driving circuit" as recited in claim 19. The Official Action contends that the TFT 1 of Tang (Fig. 2) corresponds to the claimed peripheral driving circuit device since "it is on a peripheral of the TFT2 and EL PAD and supplies driving power to the TFT2." It is respectfully submitted that such construction of the term "peripheral driving circuit" is inappropriate and incorrect. The peripheral drive circuit of the present invention is clearly depicted in Fig. 4 of the present invention. The peripheral driving circuit as shown and described in

the present application clearly fails to correspond to the TFT1 as asserted in the Official Action and therefore it is respectfully submitted that claim 19 cannot be anticipated by Tang. Favorable reconsideration is requested.

Paragraph 6 of the Official Action rejects claims 1, 3, and 12 as obvious based on the combination of the alleged admitted prior art and U.S. Patent 4,511,756 to Moeller et al. As previously stressed, Claim 1 of the present application is directed to an organic electroluminescence display device and recites the use of a barrier metal comprising titanium (or titanium nitride) interposed between an electrode comprising aluminum and one of source and drain regions. The Official Action asserts that the alleged admitted prior art lacks only the teaching of a barrier metal of titanium and asserts that Moeller teaches a barrier metal comprising titanium. The Official Action further asserts that it would have been obvious to combine the teachings of the alleged admitted prior art and Moeller because they are in the same field of endeavor and that one of skill in the art would have been motivated to do so to prevent diffusion of aluminum into the silicon source or drain region and to thereby obtain the invention of claims 1, 3 and 12.

Applicants respectfully disagree. Moeller is directed to amorphous silicon solar cells and a method of producing the same, while the present invention is directed toward an electroluminescence (EL) display device and in particular those using an organic EL material. It is respectfully submitted that the alleged admitted prior art and Moeller are not within the same field of endeavor since solar cells and display devices are significantly different devices. Furthermore, one of skill in the art would not be motivated to combine the teachings of Moeller and the alleged admitted prior art absent some desirability to doing so (See MPEP 2143.01 Suggestion or Motivation To Modify the References, section entitled "THE PRIOR ART MUST SUGGEST THE DESIRABILITY OF THE CLAIMED INVENTION"). It is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine these reference teachings from disparate fields since there is not disclosure or suggestion of the problem identified in the present application and thus no reason why one should combine the references as asserted in the Official Action.

Furthermore, Moeller teaches a barrier metal layer formed under a semiconductor layer, while the claimed barrier metal layer is formed between a

semiconductor layer (source or drain) and a transparent electrode. Therefore, the structure of Moeller is significantly different from that of the present invention and, even if combined, one of ordinary skill would not achieve the present invention.

Furthermore, claim 12 has been amended herewith to recite that the conductive layer comprises titanium nitride where a concentration of nitrogen is less than 50 atm%. New claim 20 has also been added to recite that the concentration of nitrogen is not higher than 15 atm%. These amendments are supported by at least page 10, lines 15-22 of the specification. In view of the above, favorable reconsideration is requested.

Paragraph 7 of the Official Action rejects claim 2 as obvious based on the combination of the alleged admitted prior art, Moeller and Tang et al. Claim 2 depends from claim 1 and it is respectfully submitted that Tang fails to overcome the deficiencies noted above with respect to the rejection of clams 1 based on the alleged admitted prior art and Moeller. Reconsideration is requested.

Paragraph 8 of the Official Action further rejects claims 9 and 14 as obvious based on the combination of the alleged admitted prior art, Moeller and Tang et al. As noted above, it is respectfully submitted that Tang fails to disclose a "peripheral driving circuit" as recited in independent claim 9. Therefore, since the prior art fails to teach or suggest each and every limitation recited in the claims, a *prima facie* case of obviousness cannot be maintained. Furthermore, claim 14 has been amended herewith to recite that the conductive layer comprises titanium nitride where a concentration of nitrogen is less than 50 atm%. Favorable reconsideration is requested

Paragraph 9 of the Official Action rejects claims 10, 11, and 15-18 as obvious based on the combination of Tang et al. and U.S. Patent 5,828,429 to Takemura. As stated in MPEP § 2143-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in

the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab,* 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

It is respectfully submitted that the Official Action has failed to provide a sufficient showing that one of skill in the art would have been motivated to combine the teachings of Tang and Takemura to achieve the present invention. The fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). See MPEP 2143.01. It is respectfully submitted that the Official Action has failed to sufficiently show that one of skill in the art would have recognized any desirability to combine the references as asserted in the Official Action to achieve the present invention and that a *prima facie* case of obviousness cannot be maintained for at least this reason. Reconsideration is requested.

Paragraph 10 of the Official Action asserts that claim 19 is not patentable to the subject applicant and therefore cannot form the basis for an interference. In response, claim 19 is believed to now be patentable as discussed above and therefore an interference is believed to be proper. Reconsideration is requested.

Paragraph 6 (second occurrence, page 11) of the Official Action asserts that claims 10 and 11 are not directed to the same invention as that of U.S. Patent No. 6,147,451 because claims 10 and 11 do not contain the limitations of a pixel array composed of an organic electroluminescent device or an island of a polycrystalline silicon formed thereon in a predetermined pattern. Applicant respectfully disagrees.

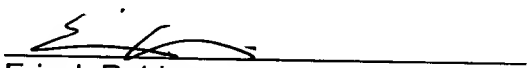
Claim 10 does not explicitly recite a "pixel" or a "pixel array," however, it is clear that a pixel is implicitly recited in claim 10 because it recites at least one X-direction signal line and at least one Y-direction signal line, a thin film transistor and a transparent electrode. Also, although claim 10 does not recite "array," it is obvious to one of ordinary skill in the art that the claimed display device has a pixel array. Also, although

claim 10 does not recite "island," it recites an "active layer comprising crystalline silicon." It is obvious that an active layer of a thin film transistor is patterned in an island form. Further, while the term "crystalline silicon" may include both single crystalline silicon and polycrystalline silicon, the preferred embodiment of the present invention utilizes polysilicon (see page 8, last paragraph). For these reasons, it is respectfully submitted that claims 10 and 11 are directed to the same invention as that of the '451 patent and reconsideration is requested.

For the same reasons and as previously stressed, claim 19 is believed to be directed to substantially the same invention as recited in claims 10 and 11 and thus the requirements of 35 U.S.C. 135(b) are believed to be met. Reconsideration and clarification of the basis of the rejection is requested in light of the above remarks and those contained in Applicant's previous response.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

9. (Amended) An electroluminescence display device comprising:

a substrate having an insulating surface;

a thin film transistor formed over said substrate, said thin film transistor comprising an active layer comprising crystalline silicon including source, drain and channel regions;

an electrode comprising aluminum electrically connected to one of said source and drain regions;

a barrier metal layer interposed between said electrode and said one of the source and drain regions to prevent a direct contact therebetween;

a transparent electrode electrically connected to said thin film transistor;

[an organic electroluminescence layer adjacent to said transparent electrode;]

an electroluminescence layer comprising an organic material disposed adjacent to said transparent electrode, and

a peripheral driving circuit comprising another thin film transistor formed over said substrate,

wherein said barrier metal layer comprises titanium.

12. (Amended) The display device according to claim 1 wherein said barrier metal layer comprises titanium nitride where a concentration of nitrogen is less than 50 atm% [or less].

14. (Amended) The display device according to claim 9 wherein said conductive layer comprises titanium nitride where a concentration of nitrogen is less than 50 atm% [or less].